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10/567,658	10/27/2006	Nikhilesh N. Singh	872,521-033	2423

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EXAMINER	
SIMMONS, CHRIS E	
ART UNIT	PAPER NUMBER
1612	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/567,658	SINGH, NIKHILESH N.	
	Examiner	Art Unit	
	CHRIS E. SIMMONS	1612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *102-126* is/are pending in the application.

4a) Of the above claim(s) *102-104 and 118* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *105-117 and 119-126* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election of Group II (claims 102-126) in the reply filed on 05/13/2008 is acknowledged. Applicant's election of the 5-HT agonist as sumatriptan, the carrier composition as binder, the ternary buffer system as sodium carbonate, sodium carbonate, and amorphous magnesium oxide, and the dosage form as lozenge is also acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 102-104 and 118 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected specie, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 05/13/2008.

Priority

Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 119(e) as follows:

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional

application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed application, Application No. 60/560,748, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application. The prior-filed application fails to disclose the limitation, "wherein said ternary buffer system raises the pH of saliva to a pH greater than about 9.9 irrespective of the starting pH of saliva". Accordingly, claims 105-117 and 119-126 cannot receive the benefit of the prior-fled application 60/560,748.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 105-109, 111-117 and 119-126 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The description requirement of the patent statute requires a description of an invention, not an indication of a result that one might achieve if one made that invention. See, e.g., In re Wilder, 22 USPQ 369, 372-3 (Fed. Cir. 1984). (Holding that a claim was not adequately described because the specification did 'little more than outline goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate.')

Mere indistinct terms (such as "5-HT agonist" used herein), however, may not suffice to meet the written description requirement. This is particularly true when a compound is claimed in purely functional terms. See Univ. of Rochester v. G.D. Searle, 69 USPQ2d 1886 (CAFC 2004) at 1892, stating:

> The appearance of mere indistinct words in a specification or a claim, even an original claim, does not necessarily satisfy that requirement. A description of an anti-inflammatory steroid, i.e., a steroid (a generic structural term) described even in terms of its functioning of lessening inflammation of tissues fails to distinguish any steroid from others having the same activity or function. A description of what a material does, rather than of what it is, usually does not suffice.... The disclosure must allow one skilled in the art to visualize or recognize the identity of the subject matter purportedly described. (Emphasis added).

Conversely, a description of a chemical genus will usually comprise a recitation of structural features common to the members of the genus, which features constitute a substantial portion of the genus. See Univ. of Calf. V. Eli Lilly, 43 USPQ 2d 1398, 1406 (Fed. Cir. 1997). This is analogous to enablement of a genus under Section 112, ¶ 1, by showing the enablement of a representative number of species within the genus.

A chemical genus can be adequately described if the disclosure presents a sufficient number of representative species that encompass the genus. If the genus has substantial variance, the disclosure must describe a sufficient number of species to

reflect the variation within that genus. See MPEP 2163. The MPEP lists factors that can be used to determine if sufficient evidence of possession has been furnished in the disclosure of the Application. These include the level of skill and knowledge in the art, partial structure, physical and/or chemical properties, functional characteristics alone or coupled with a known or disclosed correlation between structure and function, and the method of making the claimed invention. Disclosure of any combination of such identifying characteristics that distinguish the claimed invention from other materials and would lead one of skill in the art to the conclusion that the applicant was in possession of the claimed species is sufficient. MPEP 2163.

Here, the specification does not provide a reasonably representative disclosure of useful 5-HT agonists, generally, a potentially huge genus inclusive of many different compounds having widely divergent structures and functions. Specifically, the specification discloses only a limited number of species at page 7, lines 18-20, and these are not viewed as being reasonably representative of the genus in its claimed scope because no readily apparent combination of identifying characteristics is provided, other than the disclosure of those specific species as examples of the claimed genus.

2. Claim 120 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

Here, the specification does not provide a reasonably representative disclosure of useful 5-HT antagonists, generally, a potentially huge genus inclusive of many

different compounds having widely divergent structures and functions. Specifically, the specification discloses only a limited number of species at page 7, lines 24-25, and these are not viewed as being reasonably representative of the genus in its claimed scope because no readily apparent combination of identifying characteristics is provided, other than the disclosure of those specific species as examples of the claimed genus.

3. Claim 121 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

Here, the specification does not provide a reasonably representative disclosure of useful NSAID, generally, a potentially huge genus inclusive of many different compounds having widely divergent structures and functions. Specifically, the specification discloses only a limited number of species at page 7; line 30 bridging page 8, line 2 and these are not viewed as being reasonably representative of the genus in its claimed scope because no readily apparent combination of identifying characteristics is provided, other than the disclosure of those specific species as examples of the claimed genus.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 105-113, 116, 117, and 119 -122 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0022910 in view of USP 5,914,129.

The primary reference discloses a method for treating migraine headaches comprising administering a sublingual composition comprising the 5-HT agonist, dihydroergotamine (DHE). The method is an improvement in the treatment of migraine that includes administering DHE across the oral mucosa, which bypasses major limitations by allowing for higher efficacy and fewer side effects at lower doses (abstract). The composition includes carbonate sources like dry solid carbonate and bicarbonate salt, such as, sodium bicarbonate, sodium carbonate, potassium bicarbonate and potassium carbonate. DHE can be combined with other compounds like NSAIDs (paragraph [0020]), sumatriptan (paragraph [0119]) and 5-Ht antagonists like chlorpromazine (paragraph [0118]). The oral dosage forms may further contain binders (paragraph [0057]). The average particle size of the 5-Ht agonist is less than 10 microns (paragraph [0024]) the carrier size is from 50 to 750 microns (paragraph [0028]). The sublingual administration may take on many forms, including the form of a

hard, compressed, rapidly dissolving tablet. In the context of the invention, a pH adjusting agent may be added to alter or adjust the pH of the sublingual area above 4.2 (paragraph [0077]). Suitable pH adjusting agents for use in the present invention include, but are not limited to weak acids or bases in amounts additional to that required for the effervescence or, preferably, any buffer system that is not harmful to the oral mucosa, including sodium carbonate and sodium bicarbonate (paragraph [0114]; Example 8). The reference does not expressly teach the composition in combination with a metal oxide.

The secondary reference relates to magnesium-containing analgesic compositions used for the alleviation of pain, in particular, migraine headache pain. The composition contains, *inter alia*, a magnesium salt (in an amount effective to relieve at least some symptoms of such headaches) and a pharmaceutically acceptable carrier or vehicle. The symptoms of migraine headache intended to be alleviated include nausea, unilateral pain, dizziness, pulsatile pain, worsening of pain by light physical activity, photophobia and phonophobia (abstract; col.2, lines 23-29). The magnesium component of the magnesium-containing analgesic compositions of the present invention is ionic magnesium of which a suitable source is MgO (col. 3, lines 55-60). Other analgesic agents may be used in combination with the magnesium salt (col. 2, lines 36-41). Magnesium salts have been employed in compositions for treating pain and inflammation prior to the instant invention for their solubility, absorption properties and buffering effects (col. 1, lines 34-35). It is further suggested that hypomagnesaemia plays a role in migraines (col. 1, lines 36-37). Mg^{2+} has also been known to regulate N-

methyl-D-aspartate receptors, which are essential for pain transmission (col. 1, lines 48-51). The secondary reference does not expressly teach a 5-Ht agonist.

Generally, it is prima facie obvious to select a known material for incorporation into a composition, based on its recognized suitability for its intended purpose. MPEP 2144.07. Accordingly, it would have been obvious to use MgO in the composition for its known buffering and antimigraine properties.

Additionally, it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose; the idea of combining them flows logically from their having been individually taught in the prior art. MPEP 2144.06. Since MgO also has antimigraine properties and buffering properties, it would have been obvious at the time of the invention to one of ordinary skill in the art to add the MgO in the secondary reference to the antimigraine composition of the primary reference motivated by the desire to treat migraine with a composition with a lower amount of a 5-Ht agonist required to achieve a similar level of therapeutic relief that would be achieved by a higher amount.

5. Claims 114, 115, and 123-126 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0022910 and USP 5,914,129, the combination taken in view of Hancock et al. (Pharm. Res (2000); Vol. 17, No. 4:397-404).

The disclosures of the primary and secondary references and the rationale for their combination are outlined supra. The combination does not expressly teach amorphous forms of MgO.

The tertiary reference discloses that amorphous forms of pharmaceuticals are markedly more soluble than the crystalline forms (abstract). It is suggested that the amorphous form of a drug also leads to increased bioavailability. The reference does not expressly teach a ternary buffer.

It would have been obvious to one ordinary skill in the art at the time of the invention to use the amorphous form of MgO in the composition suggested by the primary and secondary references. The motivation would have been to increase the bioavailability of the MgO to maximize its antimigraine effects and, therefore, allowing the artisan to use a lower amount of MgO to produce the same amount effect as a higher dose a non-amorphous form.

Conclusion

No claims are allowed.

The following is pertinent art not relied upon for the current office action:

WO/2003/092591 – discloses compositions for oral administration of actives for suppressing nausea and vomiting. The composition comprises a carrier, an antiemetic active, and a buffer. The carrier may be a gum, a lozenge, a candy or a tablet suitable

for administration in an oral cavity. The buffer is water-soluble, and facilitates bi-phasic release of the active for transmucosal absorption (abstract).

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRIS E. SIMMONS whose telephone number is (571)272-9065. The examiner can normally be reached on Monday - Friday from 7:30 - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frederick Krass can be reached on (571) 272-0580. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. E. S./
Examiner, Art Unit 1612

/Frederick Krass/
Supervisory Patent Examiner, Art Unit 1612